

CLAIMS

- 1 1. A fusible bung, comprising:
2 a first wall having at least one fastening feature by which said bung can be
3 mounted at an opening in a supporting structure;
4 a second wall spaced inwardly from said first wall with a vent passage
5 being located between said first and second walls; and
6 a fusible link interconnecting said first and second walls and closing off
7 said vent passage, wherein said second wall is supported by said
8 fusible link.
- 1 2. A fusible bung as defined in claim 1, wherein said fusible link and said walls
2 together comprise a unitary body of polymeric material.
- 1 3. A fusible bung as defined in claim 2, wherein said polymeric material
2 comprises HDPE.
- 1 4. A fusible bung as defined in claim 1, wherein said fusible link comprises a
2 thin walled section of polymeric material having a thickness of less than or
3 equal to 0.04 inches.
- 1 5. A fusible bung as defined in claim 4, wherein said fusible link has a width of
2 less than or equal to 0.312 inches.
- 1 6. A fusible bung as defined in claim 4, wherein said first and second walls have
2 a dimension in the thickness direction of said fusible link of at least fifteen
3 times the thickness of said fusible link.
- 1 7. A fusible bung as defined in claim 1, wherein said first wall is a cylindrical
2 wall and said fastening feature comprises threads located on said first wall.
- 1 8. A fusible bung as defined in claim 7, further comprising at least one safety
2 vent formed as a radial opening extending through said threads in said first
3 wall.
- 1 9. A fusible bung as defined in claim 1, further comprising a cover member
2 located within a central region of said second wall, wherein said first and

- 3 second walls, said fusible link, and said cover member each comprise unitary
4 portions of a single body.
- 1 10. A fusible bung as defined in claim 1, further comprising an opening located
2 inwardly within said second wall for receiving a relief valve.
- 1 11. A fusible bung as defined in claim 10, wherein said first and second walls
2 comprise concentric cylindrical walls said second wall includes a threaded
3 bore for receiving the relief valve.
- 1 12. A fusible bung, comprising:
2 a first wall;
3 a second wall spaced inwardly from said first wall with a vent passage
4 being located between said first and second walls; and
5 a fusible link interconnecting said first and second walls and closing off
6 said vent passage, wherein, at lower temperatures said fusible link
7 prevents the escape of gases through said vent passage and, at higher
8 temperatures said fusible link melts, thereby permitting the gases to
9 escape through said vent passage.
- 1 13. A fusible bung as defined in claim 12, wherein said first wall includes a
2 threaded cylindrical portion for mounting of said fusible bung, and wherein
3 said second wall is supported by said fusible link.
- 1 14. A fusible bung as defined in claim 12, wherein said fusible link and said walls
2 together comprise a unitary body of polymeric material.
- 1 15. A fusible bung as defined in claim 14, wherein said polymeric material
2 comprises HDPE.
- 1 16. A fusible bung as defined in claim 12, wherein said fusible link comprises a
2 thin walled section of polymeric material having a thickness of less than or
3 equal to 0.04 inches.
- 1 17. A fusible bung as defined in claim 16, wherein said fusible link has a width of
2 less than or equal to 0.312 inches.

- 1 18. A fusible bung as defined in claim 16, wherein said first and second walls have
2 a dimension in the thickness direction of said fusible link of at least fifteen
3 times the thickness of said fusible link.
- 1 19. A fusible bung as defined in claim 12, wherein said first wall is a cylindrical
2 wall and includes an annular shoulder, and wherein said bung further
3 comprises a sealing ring attached to said first wall at said shoulder.
- 1 20. A fusible bung as defined in claim 19, wherein said shoulder includes an
2 annular rib that engages said sealing ring during tightening of said bung.
- 1 21. A fusible bung as defined in claim 12, further comprising a plurality of tool
2 engaging surfaces located at said first wall for tightening and loosening of said
3 bung using a tool.
- 1 22. A fusible bung as defined in claim 21, wherein said tool engaging surfaces
2 comprise notches located about the periphery of said first wall.
- 1 23. A fusible bung for sealing an opening in a liquid container, comprising:
2 a circular body;
3 a sealing ring attached to said body, wherein said body includes at least
4 one fastening feature such that said body can be attached over said
5 opening with said sealing ring providing a gas-tight seal of said bung
6 to said opening; and
7 a venting fuse unitary with said body and being located radially inwardly
8 of said sealing ring.
- 1 24. A fusible bung as defined in claim 23, wherein said body includes cylindrical
2 first and second concentric walls interconnected by said venting fuse.
- 1 25. A fusible bung as defined in claim 24, wherein said first wall includes an
2 annular shoulder with said sealing ring being seated on said shoulder.
- 1 26. A fusible bung as defined in claim 25, wherein said shoulder includes an
2 annular rib adjacent said sealing ring.

- 1 27. A fusible bung as defined in claim 23, wherein said venting fuse comprises a
2 thin walled section of polymeric material having a thickness of less than or
3 equal to 0.04 inches.
- 1 28. A fusible bung as defined in claim 27, wherein said venting fuse has a width
2 of less than or equal to 0.312 inches.
- 1 29. A fusible bung as defined in claim 27, wherein said body includes cylindrical
2 first and second concentric walls interconnected by said venting fuse and
3 wherein said first and second walls have a dimension in the thickness direction
4 of said venting fuse of at least fifteen times the thickness of said venting fuse.
- 1 30. A fusible bung comprising a unitary body having a thin walled section of
2 fusible material bounded on opposite sides by thicker wall sections of said
3 material, said thin walled section of fusible material comprising a fuse having
4 a thickness and having a width that is greater than said thickness.
- 1 31. A fusible bung as defined in claim 30, wherein said fuse comprises a thin
2 walled section of polymeric material having a thickness of less than or equal
3 to 0.04 inches.
- 1 32. A fusible bung as defined in claim 31, wherein said fuse has a width of less
2 than or equal to 0.312 inches.
- 1 33. A fusible bung as defined in claim 30, wherein said thicker wall sections each
2 have a dimension in the thickness direction of said fuse of at least fifteen times
3 the thickness of said fuse.
- 1 34. A fusible bung as defined in claim 30, wherein said fusible material comprises
2 HDPE.
- 1 35. A fusible bung for sealing an opening in a threaded flange on a liquid
2 container, comprising:
3 a cylindrical exterior wall extending axially and having a threaded portion
4 located near an axial end of said exterior wall;
5 a cylindrical interior wall spaced radially inwardly from said exterior wall;

6 a cylindrical vent passage located between said interior and exterior walls;
7 a venting fuse forming a third wall extending across said vent passage and
8 interconnecting said first and second walls; and
9 at least one safety vent comprising a radial opening in said threaded
10 portion of said exterior wall.

1 36. A fusible bung as defined in claim 35, wherein said venting fuse and said
2 walls together comprise a unitary body of polymeric material.

1 37. A fusible bung as defined in claim 36, wherein said polymeric material
2 comprises HDPE.

1 38. A fusible bung as defined in claim 35, wherein said venting fuse has a width
2 and has a thickness that is less than its width, and wherein said interior and
3 exterior walls have a dimension in the thickness direction of said venting fuse
4 of at least fifteen times the thickness of said venting fuse.

1 39. A fusible bung for sealing an opening in a threaded flange on a liquid
2 container, comprising:

3 a cylindrical exterior wall extending axially and having a threaded portion
4 located near an axial end of said exterior wall;
5 a cylindrical interior wall spaced radially inwardly from said exterior wall
6 and extending axially for a shorter distance than said exterior wall;
7 a shoulder extending from said exterior wall;
8 a sealing ring located at said shoulder;
9 a vent passage interposed between said interior and exterior walls;
10 an annular venting fuse comprising a thin walled section of polymeric
11 material which interconnects and is unitary with said interior and
12 exterior walls; and
13 at least one safety vent comprising a radial opening in said threaded
14 portion of said exterior wall.

1 40. A fusible bung as defined in claim 39, wherein said polymeric material
2 comprises HDPE and said venting fuse has a thickness of less than or equal to
3 0.04 inches.

- 1 41. A fusible bung as defined in claim 39, further comprising a cover member
2 located within a central region of said interior wall, wherein said interior and
3 exterior walls, said venting fuse, and said cover member each comprise
4 unitary portions of a single body.
- 1 42. A fusible bung as defined in claim 39, wherein said interior wall includes a
2 threaded bore for receiving a relief valve.